

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning at page 5, line 4, as follows:

Substrate 18 and housing 12 have a rectangular cross section. Preferably, substrate 18 ~~12~~ is wrapped with mat 16 and is placed between shells 13. Shells 13 are connected to one another securing substrate 18 therein. As illustrated in Figure 1, reactor 10 includes a voltage port 20 and a ground 24. Voltage port 20 supplies high voltage electricity to substrate 18.

Please amend the paragraph beginning at page 9, line 1, as follows:

Referring now to the embodiments illustrated in Figures 13 and 14, substrate 18 is further retained in housing 12 by a retaining device 90. Retaining device 90 reduces the exposure of mat 16 to exhaust gas and more effectively distributes the compression forces from the mat to substrate 18. Retaining device 90 is a compression stop 92. Retaining stop 92 compresses mat 16 to a density greater than 0.3gram/cc between the retaining stop and end plate 14 without applying the relatively high forces generated by this compression to area 40. Thus, mat 16 has a density less than 0.3grams/cc, while the mat between stop 92 and end plate 14 has a density greater than 0.3 gram/cc for high erosion resistance. Stop 92 has an overlap portion 94 that overlaps substrate 18 at openings 36 to distribute the axial compressive load to areas 42 and 44 of the substrate. Preferably, stop 92 includes one or more reinforcing ribs 96. Reinforcing

ribs help to transmit radial compressive loading on weak zones 40 of substrate 18 to areas 42 and 44 by preventing the stop from bending toward the substrate, and to prevent stop 92 from bending due to the high compressive loads from mat 16 between stop 92 and end plate or end 14.

Please amend the paragraph beginning at page 9, line 18, as follows:

Ends 14 include an enhanced diffusion header 98 disposed at inlet 15 and outlet 17 of housing 12. More specifically, header 98 is in close proximity to overlap portion 94. Preferably, header 98 is in a range of about 0.5mm to 1.5mm from overlap portion 94. More preferably, header 98 is about 1mm from overlap portion 94. Thus, header 98 and stop 92 act as a diffuser to direct the flow of exhaust gas into opening 36 and to minimize the amount of exhaust gas that contacts mat 16. Mat 16 in this area is also compressed to a high density so it is resistant to erosion. Thus, stops 92 avoid placing the high compressive loads from mat 16 on weak areas 40. Moreover, the cooperation of overlap portion 94 and ribs 96 with substrate 18 more evenly distributes the axial and radial compression from mat 16 to areas 42 and 44 of substrate 18. In the embodiment of Figure 14, stops 92 are formed as separate pieces. Conversely, in the embodiment of Figure 15 stops 92 are formed as a single piece.

Please amend the paragraph beginning at page 10, line 26, as follows:

Referring now to the embodiment of Figures 16-18, substrate 18 is further retained in housing 12 by a retaining device 106. Retaining device 106 is a rigid insulation board disposed adjacent weak areas 40 of substrate 18. Thus, retaining device 106 minimizes forces

on weak areas 40, and provides a “stop” for mat 16 used at each end of substrate 18. Thus, retaining device 106, compresses mat 16 to a density above 0.3 grams/cc by placing the mat between the end plate 14 and the retaining device during assembly of reactor 10. Accordingly, retaining device 106 provides sealant 82 to further protect mat 16.